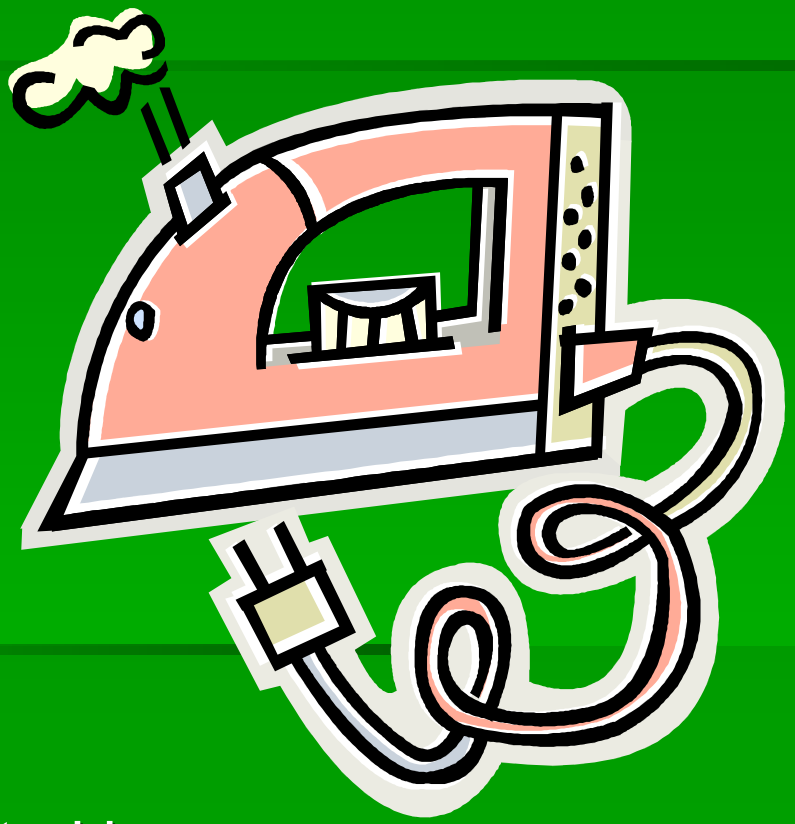
Inspecting Dry Cleaners



Presentation presented by
Neadra Richard and
Floyd Riley

DRY CLEANING INDUSTRY

- According to the Centers for Disease Control's (CDC's) National Institute for Occupational Safety and Health (NIOSH), "The commercial drycleaning industry in the United States consists of approximately 36,000 shops. Most of these shops are small businesses with fewer than 10 employees. Approximately 85% of drycleaning shops in the U.S. use perchloroethylene as their primary solvent" (CDC NIOSH, 2007).

WHAT IS PERC?

- Perc, aka percholorethylene, PCE, tetrachloroethylene, and tetrachloroethene
- It is a clear liquid with a sweet smell and an odor threshold of 1 part per million (ppm).
- Besides dry cleaning, it is also used for metal degreasing, shoe polish, printing inks, textiles, and other manufactured products.

WHY IS PERC IN THE SPOTLIGHT?

- The earliest dry cleaners used petroleum-based solvents including fuels such as gasoline and kerosene.
- Perc was introduced to the U.S. dry cleaning industry in the early 1900's.
- Since perc wasn't a fire hazard, cleaners began to move into residential and commercial areas.
- Perc became the solvent of choice because it does not have a flash point and has a high K.B. Value (degreasing ability)
- It was not until the late 1970s that increasing evidence demonstrated perc use by professional dry cleaners to be harmful to human health and the environment
- Perc is toxic and a carcinogen. Concrete is not impervious to perc.
- Since it's heavier than water, it migrates to ground water.
- A small amount of perc can contaminate a large amount of water.

GENERAL PROCESS DESCRIPTION- Solvents

- The dry cleaning process involves the use of solvents such as:
  - Perchloroethylene - the "standard" for cleaning performance; most aggressive cleaner (F002, U210)
  - High flash point hydrocarbons DF-2000 (140°F/60°C flash point – nonhazardous)
  - Modified hydrocarbons blends (Pure Dry)
  - Glycol ethers (dipropylene glycol tertiary-butyl ether) (Rynex)

GENERAL PROCESS DESCRIPTION- Solvents (cont'd)

- Cyclic Silicone decamethylcyclopentasiloxane (siLOKsane), GreenEarth; degrades into SiO_2 (sand), CO_2 (carbon dioxide), and H_2O (water).
- Liquid CO_2 – this method has been rated superior to even conventional methods
- Trichlorotriflouroethane, fluorocarbon 113 - Valclene

GENERAL PROCESS DESCRIPTION

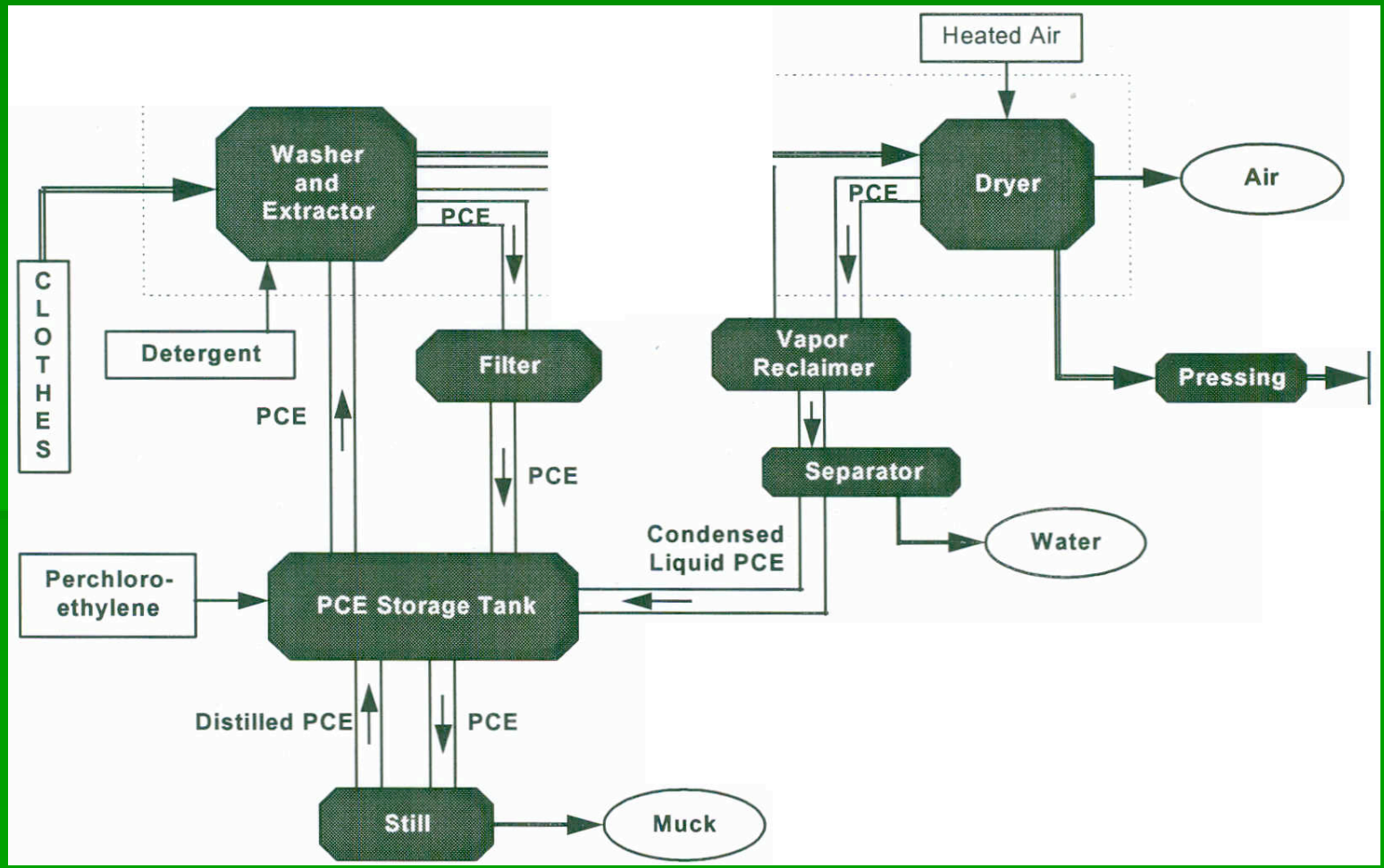
- Two types of dry cleaning machines:
  - Transfer
  - Dry-to-Dry
    - Vented
    - Converted
    - Closed-loop

GENERAL PROCESS DESCRIPTION

- Transfer machines clean and dry materials in separate units.
  - They are similar to home washing machines and dryers.
  - Materials cleaned in a washing unit
  - Solvent is extracted during the spin cycle
  - Materials transferred to a drying (reclaimer) unit

GENERAL PROCESS DESCRIPTION

PCE Transfer Machine



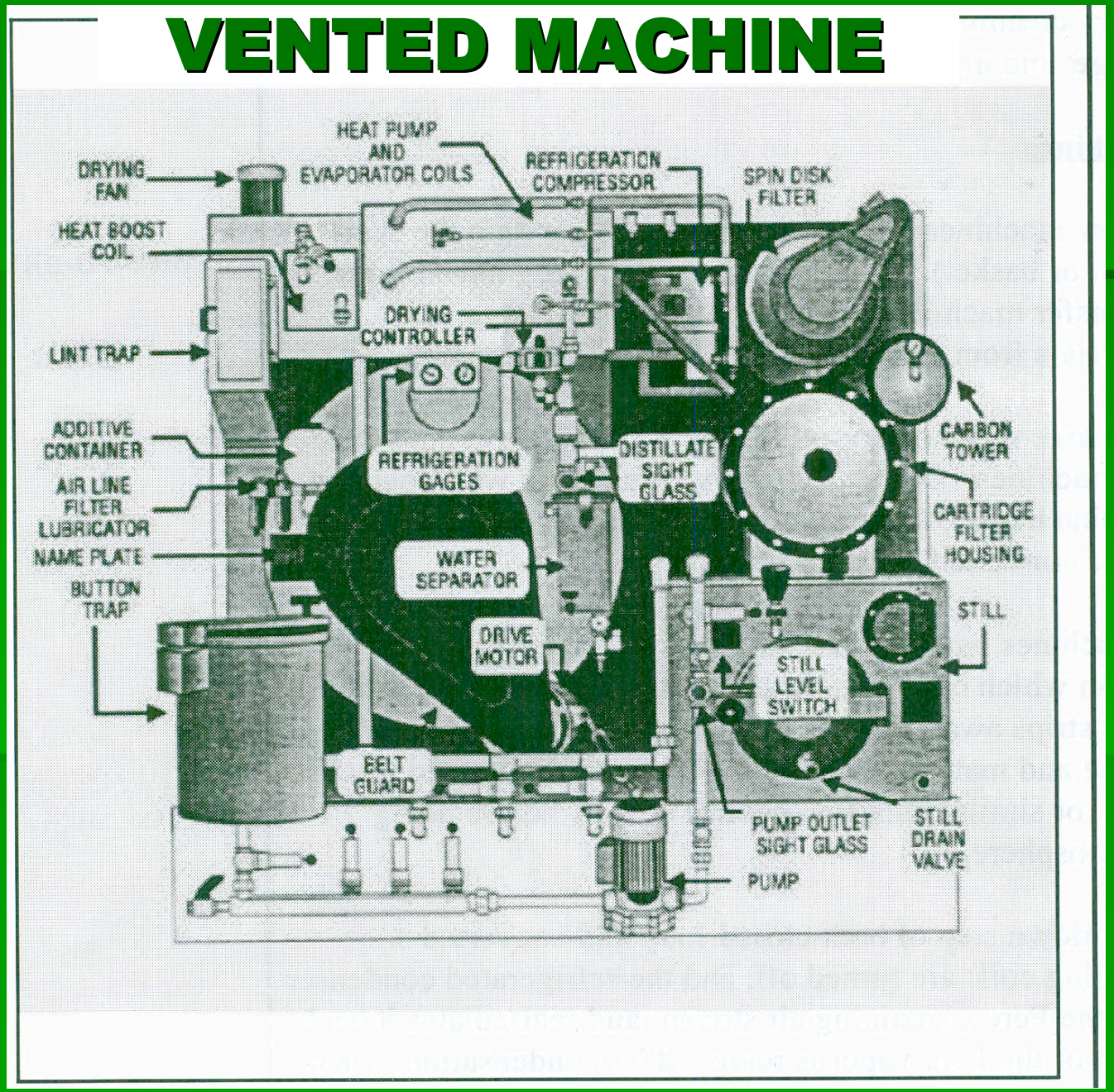
GENERAL PROCESS DESCRIPTION

- Vented Machines
  - Cool air is introduced into the drum (or basket) to strip away the solvent vapors
  - The air is then vented through a control device, such as a carbon absorber, and released to the atmosphere.

GENERAL PROCESS DESCRIPTION

- Closed-Loop Machines
  - Secondary control systems activated during the cool down step route the solvent vapor to a vapor absorber, removing the solvent
  - The air is then recirculated into the drum to remove additional solvent vapors

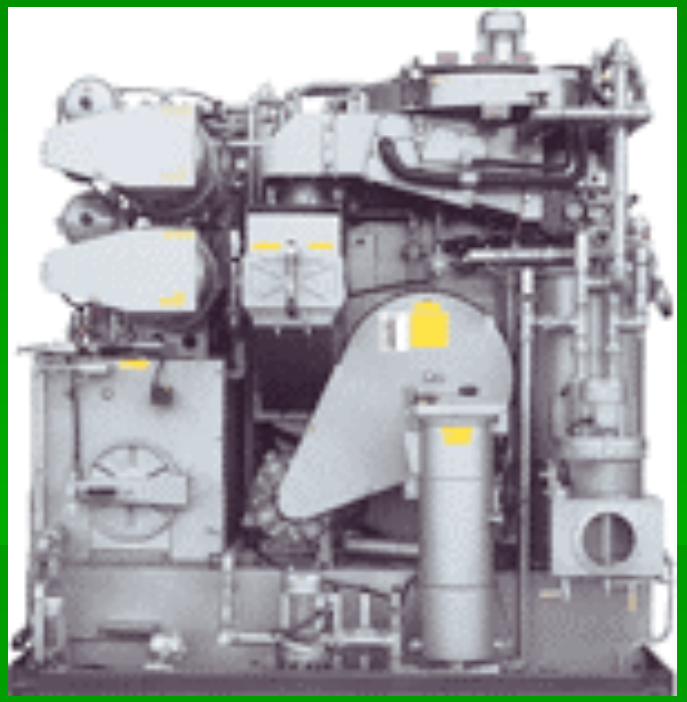
VENTED MACHINE



PERC MACHINES

FRONT

BACK



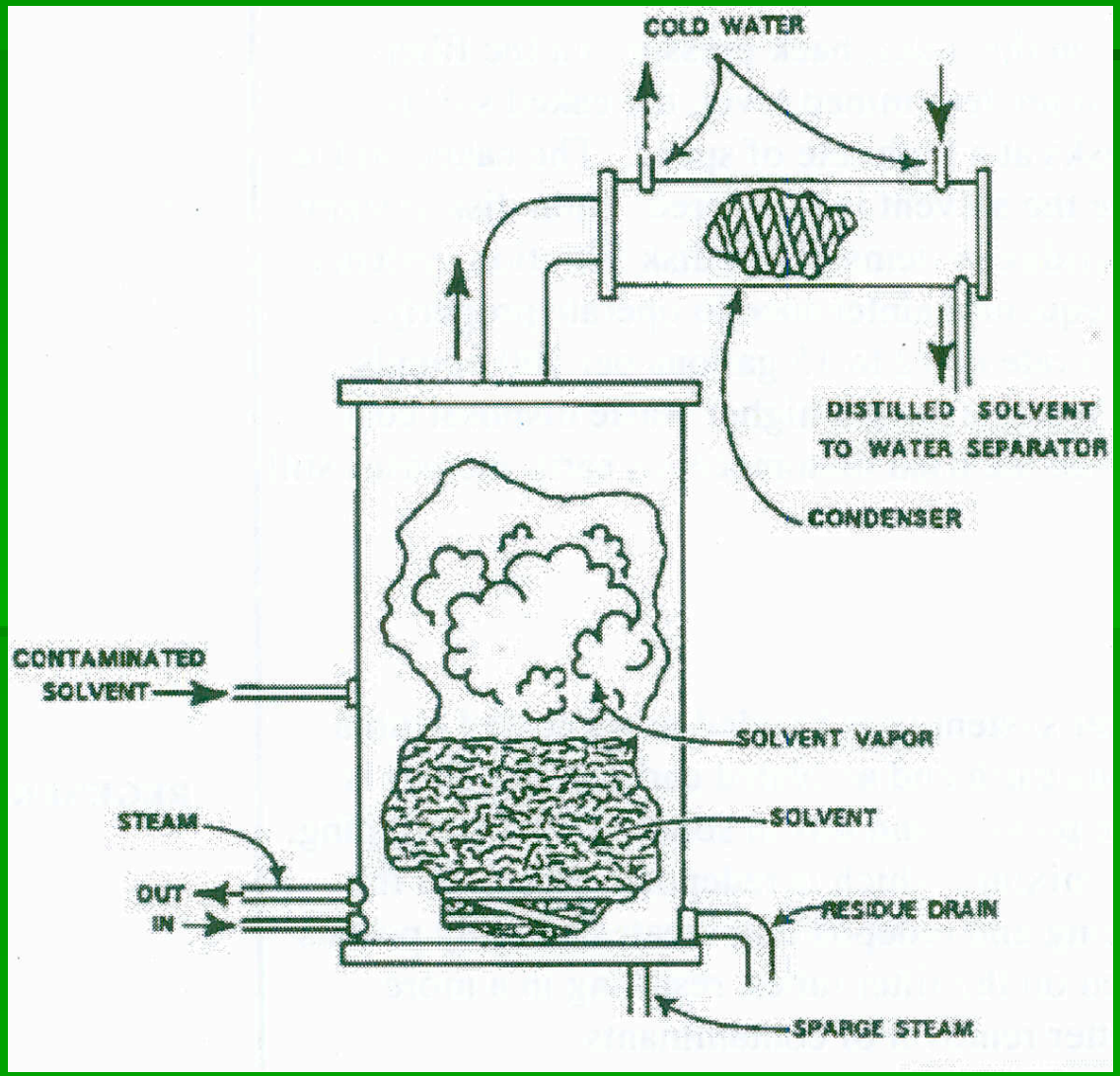
GENERAL PROCESS DESCRIPTION

- Converted Machines
  - Dry-to-dry vented machine with a condenser
  - The condenser eliminates the aeration step
  - Solvent vapor air passes through the refrigerated condenser, no exhaust is released to the atmosphere

TYPICAL WASTES GENERATED

- Cooked powder residues
- Still bottom residues
- Spent cartridges/filters
- button/lint trap wastes
- Separator water (if applicable)

Water Separator Diagram



FEDERAL REQUIREMENTS

- Dry cleaners are subject to the generator requirements found in 40 Code of Federal Regulations (CFR) §260-265.
- Most dry cleaners are Conditionally Exempt Small Quantity Generators (CESQG); and therefore, must abide by 40 CFR §261.5 and the requirements referenced therein.
- Requirements for Small Quantity and Large Quantity Generators are subject to full regulation.

HB 1366 -Dry Cleaner Environmental Response

- Signed June 20, 2003, to create the Dry Cleaning Remediation Fund for state lead cleanup
- Established registration requirements, fees, performance standards, and revenue disbursement
- Purpose is to prevent pollution and move industry toward less polluting chemicals and pollution prevention in delivery of storage, use and handling of chemicals

Texas Dry Cleaner Environmental Response
30 TAC §337

- Additionally, Texas dry cleaners are regulated under 30 TAC §337.
- Effective June 1, 2005
  - Registration for dry cleaning facilities, drop stations, and distributors
  - Performance standards:
    - Storage, treatment, and disposal of hazardous waste in accordance with 30 TAC § 335, Subchapter C (relating to Standards Applicable to Generators of Hazardous Waste)

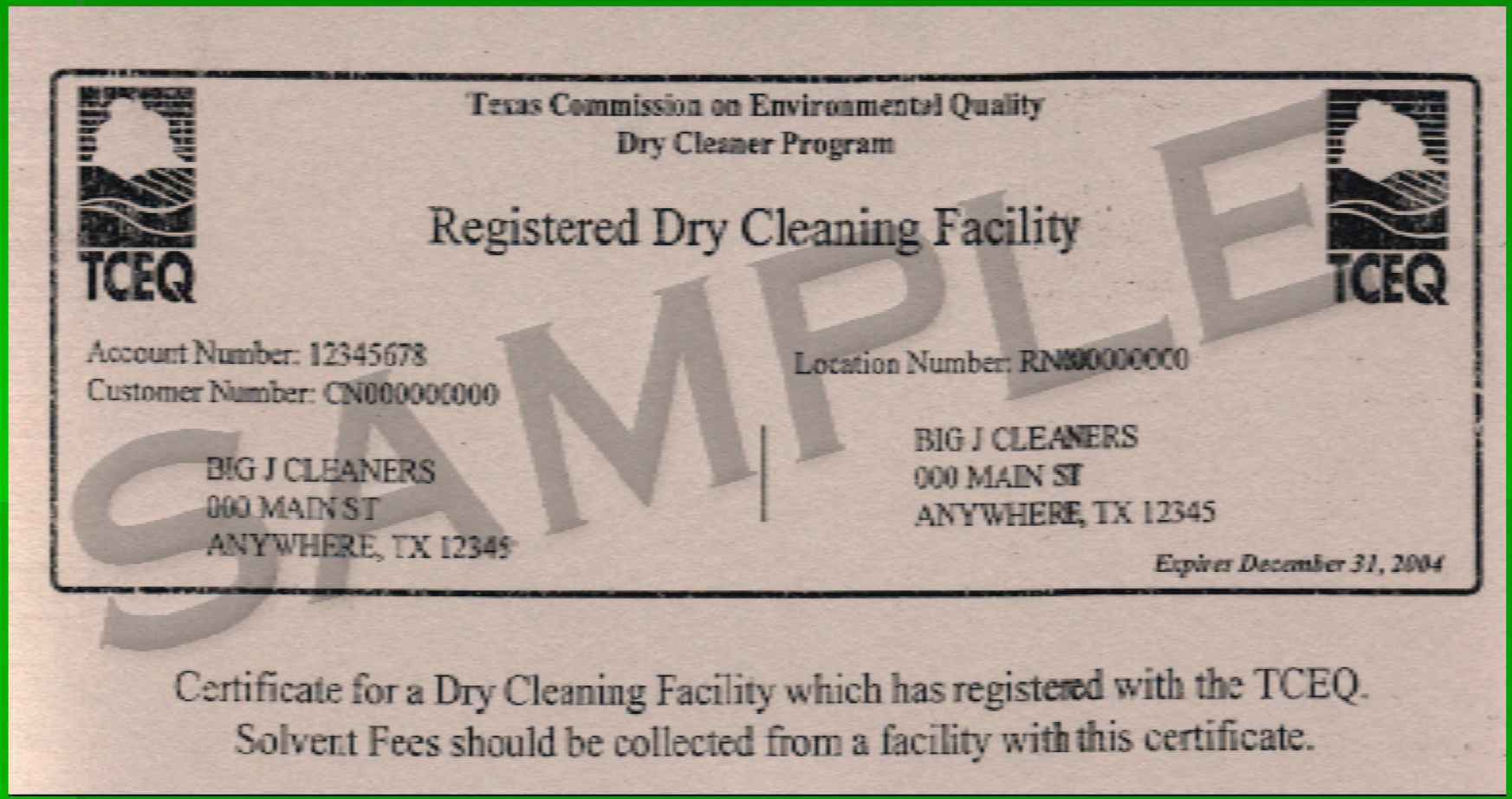
Texas Dry Cleaner Environmental Response
30 TAC §337 (cont'd)

- Air Emission Standards – compliance with 30 TAC Chapters 106 (relating to Permits by Rule) and 116 (relating to Control of Air Pollution by Permits for New Construction or Modification
- Dikes and other secondary containment structures for facilities using chlorinated dry cleaning solvents and facilities that replace or install a dry cleaning machine.
  - Secondary containment of 110% capacity is required around each dry cleaning unit and each storage area for dry cleaning solvent, solvent waste, and wastewater.

Solvent Distributors

- Distributors are also required to register with the State.
- A distributor must not deliver to unregistered dry cleaners
- Perc cannot be delivered to non-perchloroethylene dry cleaners

Registered Dry Cleaning Facility



Texas Commission on Environmental Quality
Dry Cleaner Program

TCEQ

Registered Dry Cleaning Facility

TCEQ

Account Number: 12345678
Customer Number: CN00000000

Location Number: RN00000000

BIG J CLEANERS
000 MAIN ST
ANYWHERE, TX 12345

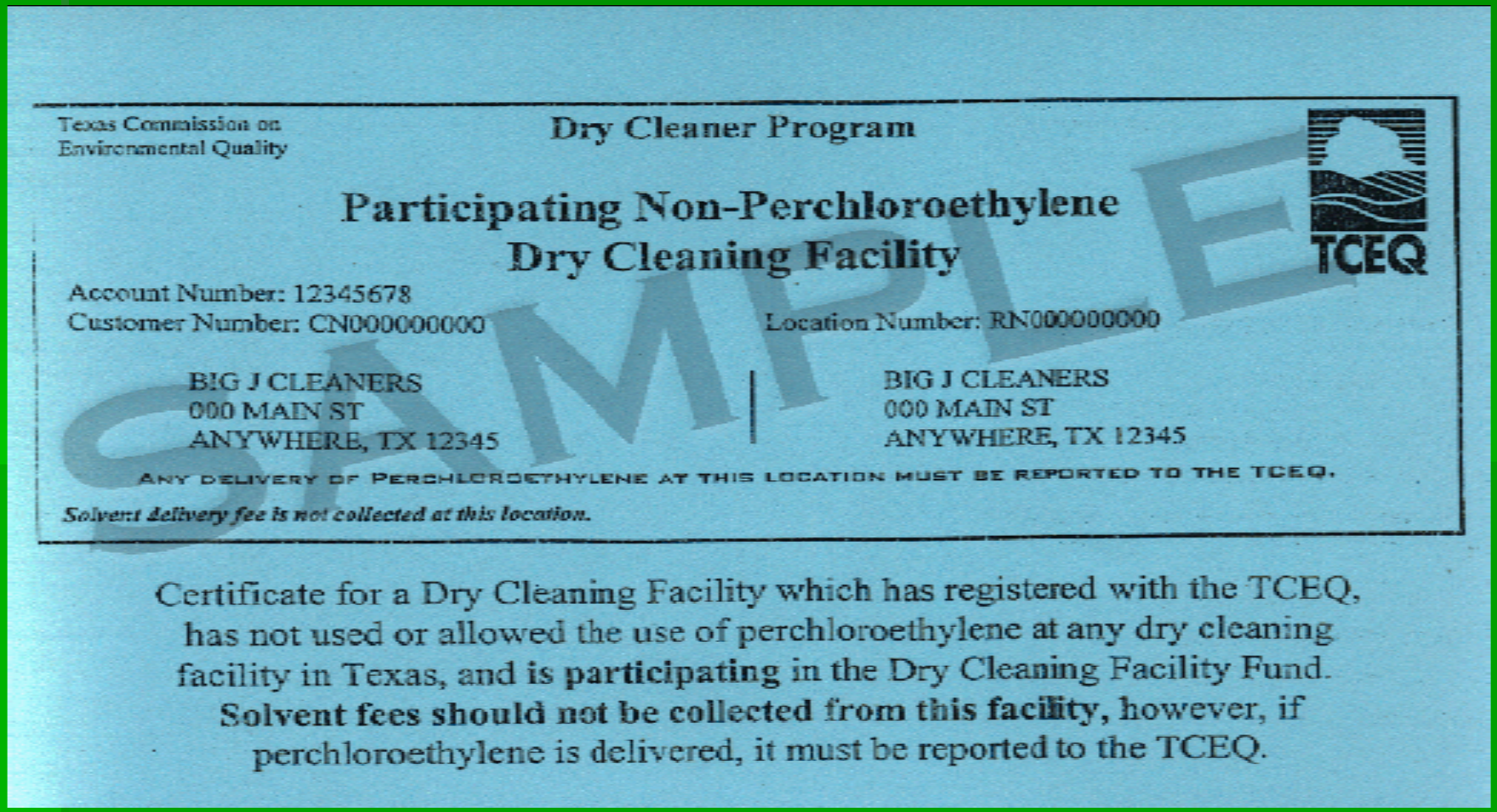
BIG J CLEANERS
000 MAIN ST
ANYWHERE, TX 12345

Expires December 31, 2004

SAMPLE

Certificate for a Dry Cleaning Facility which has registered with the TCEQ.
Solvent Fees should be collected from a facility with this certificate.

Participating Non-Perchloroethylene



Texas Commission on Environmental Quality

Dry Cleaner Program

TCEQ

Participating Non-Perchloroethylene Dry Cleaning Facility

Account Number: 12345678
Customer Number: CN000000000

Location Number: RN000000000

BIG J CLEANERS
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ANYWHERE, TX 12345

BIG J CLEANERS
000 MAIN ST
ANYWHERE, TX 12345

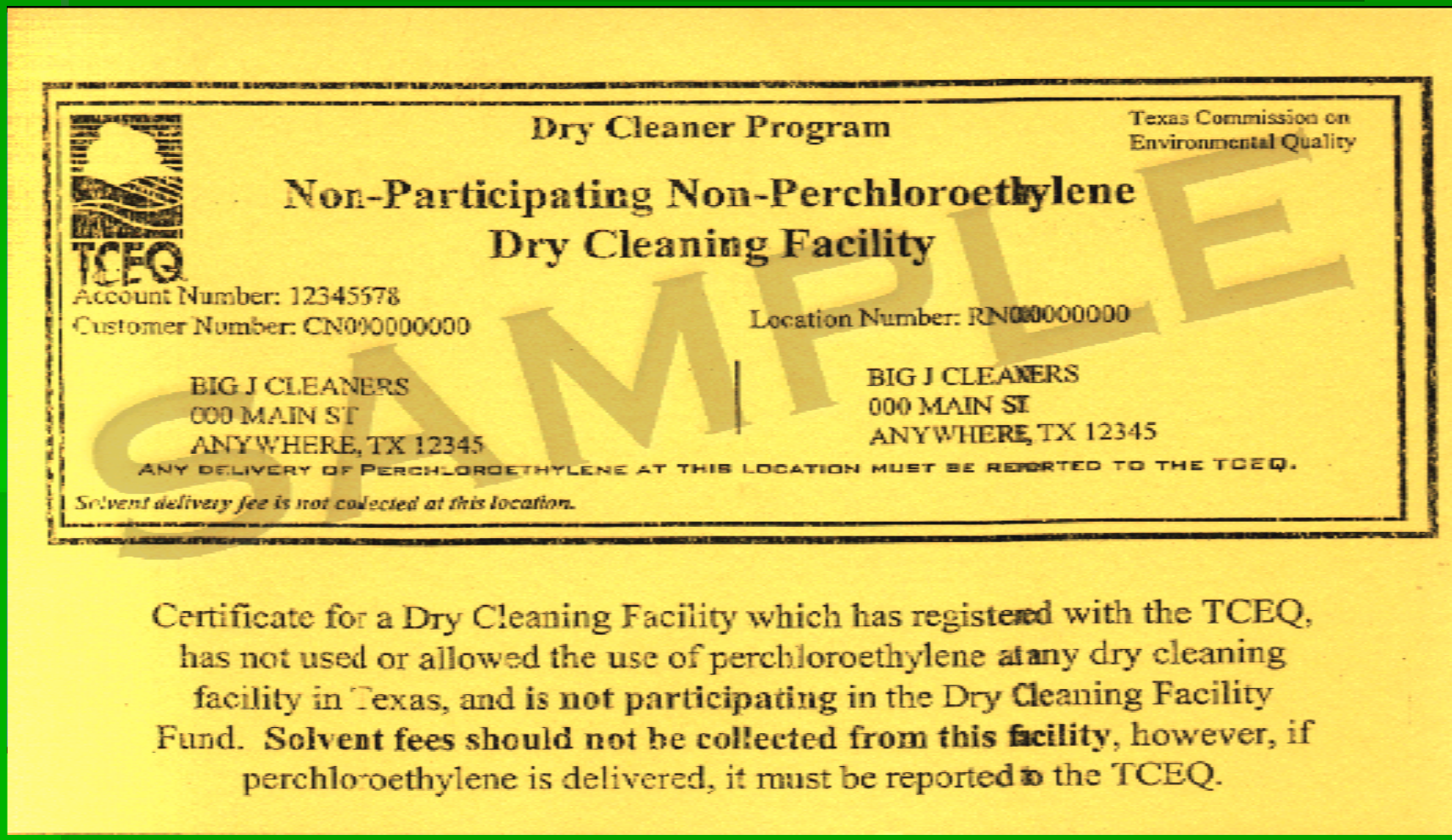
ANY DELIVERY OF PERCHLOROETHYLENE AT THIS LOCATION MUST BE REPORTED TO THE TCEQ.

Solvent delivery fee is not collected at this location.

SAMPLE

Certificate for a Dry Cleaning Facility which has registered with the TCEQ, has not used or allowed the use of perchloroethylene at any dry cleaning facility in Texas, and **is participating** in the Dry Cleaning Facility Fund. **Solvent fees should not be collected from this facility,** however, if perchloroethylene is delivered, it must be reported to the TCEQ.

Non-Participating Non-Perchloroethylene



Dry Cleaner Program

Texas Commission on Environmental Quality

TCEQ

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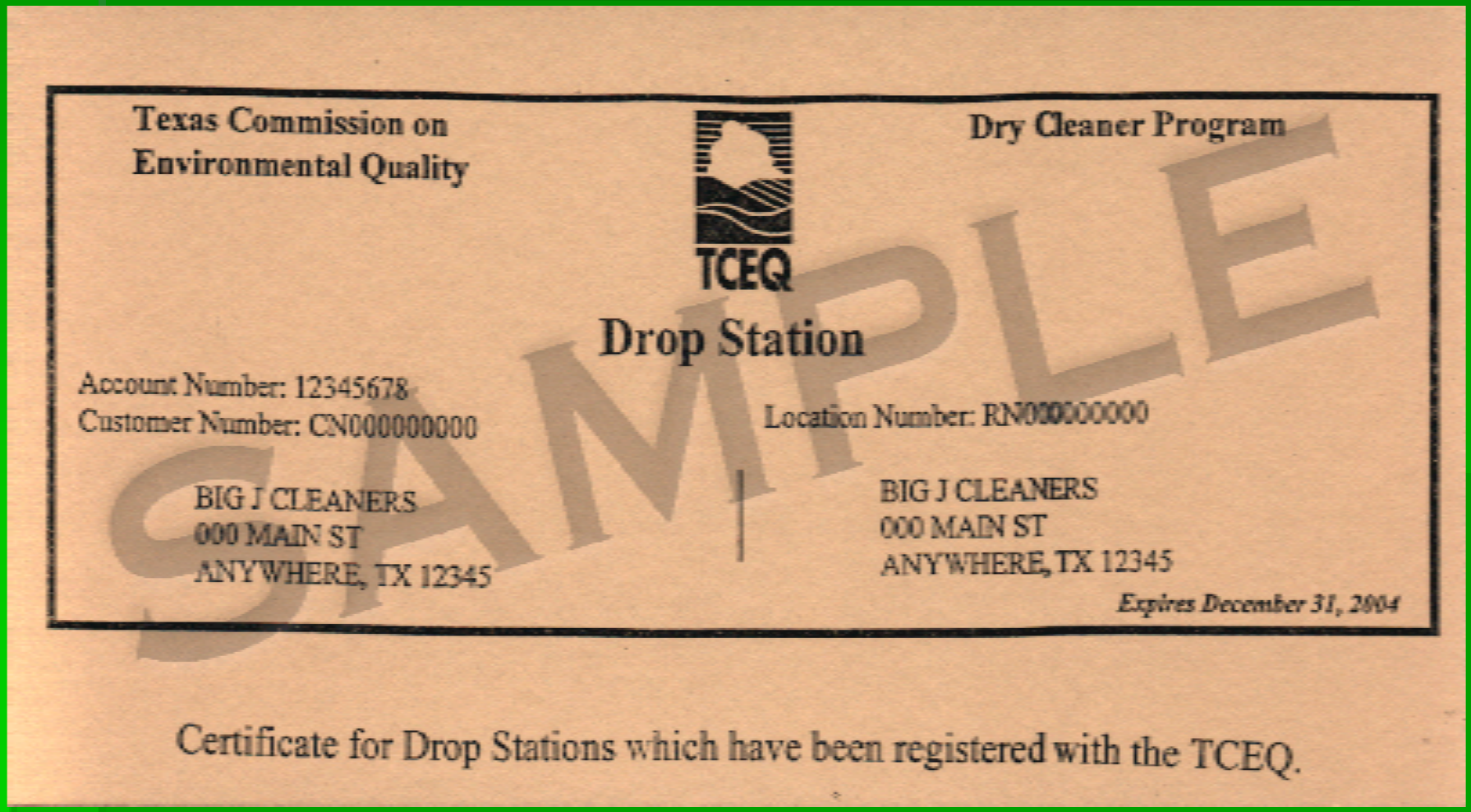
Drop Station



Texas Commission on
Environmental Quality

Dry Cleaner Program

TCEQ

Drop Station

Account Number: 12345678
Customer Number: CN000000000

Location Number: RN000000000

BIG J CLEANERS
000 MAIN ST
ANYWHERE, TX 12345

BIG J CLEANERS
000 MAIN ST
ANYWHERE, TX 12345

Expires December 31, 2004

SAMPLE

Certificate for Drop Stations which have been registered with the TCEQ.

COMMON VIOLATIONS

- Federal
  - Waste Determinations
  - Record keeping
  - Labeling
  - Container Storage (open drums)
- Texas
  - Waste Classification
  - Registration
  - Secondary Containment
  - Additional Record keeping

COMMON VIOLATIONS

COMMON VIOLATIONS

THE END

QUESTIONS??